## REMARKS

Claims 1-31 are pending. Claims 1, 5, 12, and 29 are being amended.

The abstract of the disclosure was objected to because it included 214 words. The abstract is being amended to include 150 words as suggested by the Examiner.

Claims 1-31 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Specifically, the Examiner asserted that claims 1-31 represent abstract methodology and therefore are intangible.

The applicants submit that claims 1 and 12, as amended, and original claims 2-11 and 13-31 are directed to statutory subject matter. In particular, amended claim 1 recites a computer-implemented method for controlling the operation of a computer structure for processing fuzzy inferences. The method includes:

organizing, for a quantity included among membership functions and operands, a computer store for storing values of the quantity which are already available;

checking, using the computer structure, at a time of identification of a new value of the quantity, whether the new value is already present in the computer store; and

preventing, in response to the checking, redundant storage of the new value of the quantity in the computer structure.

The computer-implemented method of claim 1 is tangible because it is limited to a practical application in the technological arts. Specifically, it employs a computer structure, including a computer store, in a manner that prevents redundant storage of fuzzy quantities in the computer store. Preventing redundant storage limits the amount of storage space needed to store the fuzzy quantities, which makes the processing of the fuzzy inferences more efficient. Such preventing of redundant storage is not an abstract idea, and instead, is a practical application that enables more efficient usage of computer resources. As pointed out in the Background section of the application, numerous practical uses for fuzzy processing are well known in the art, and thus, those skilled in the art would easily recognize many practical applications of the claimed invention. Further, As stated in the Lin article discussed below, "fuzzy inference systems based on fuzzy set theory have been applied to a wide range of fields such as industrial process control, pattern recognition, management, expert systems, medical sciences, etc.

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Accordingly, amended claim 1 recites statutory subject matter according to Section 101.

Although the language of amended claim 12 differs from that of claim 1, the statutory nature of amended claim 12 will be apparent in view of the above discussion.

Claims 2-11 and 13-22 depend on claims 1 and 12, respectively, and thus are also directed to statutory subject matter. In addition, each of claims 2-11 and 13-22 recites additional features that are particular aspects of the practical application of the invention. For example, with respect to claim 3, the operations of encoding fuzzy inferences, establishing a pointing mechanism, checking whether a given encoded fuzzy inference points to an encoded membership function already present in the computer store, and acting on the pointing mechanism are part of a specific practical application that more efficiency encodes fuzzy inferences. Accordingly, claims 2-11 and 13-22 are further directed to statutory subject matter within the meaning of Section 101.

Original claims 23-31 include many features that reflect the practical application of the claimed invention. In particular, claim 23 recites a processing structure that includes a membership function storage device and fuzzy inference encoding means for encoding an input fuzzy inference into an encoded fuzzy inference. Such structures, in light of the specification, clearly permit a person skilled in the art to put the claimed invention into numerous practical uses, such as those discussed above. Similar considerations apply to the processing structure recited in claim 29.

For at least the foregoing reasons, claims 1-31 recite statutory subject matter.

Claims 1-31 were rejected under 35 U.S.C. § 102(a) as being anticipated by an article entitled "Dynamic-Link Rule Base in Fuzzy Inference System" by Lin.

Lin does not anticipate claims 1-31 under section 102(a) because Lin was not published before the claimed invention was made. According to the copy of Lin received from the Examiner, Lin was published October 12-15, 1999. The European patent application 00830082.4, from which the present application claims priority, was filed on February 8, 2000. Enclosed is a Rule 131 Declaration signed by one of the inventors, Francesco Papalardo, showing that the claimed invention was conceived prior to October 12-15, 1999 and was

diligently reduced to practice with the filing of the priority European patent application 00830082.4. In support of the Declaration are a Patent Proposal (Appendix A) dated September 28, 1999 (with English translation), which describes the claimed invention in detail, and three documents (Appendixes B-D) with English translation showing diligent steps to reduce the invention to practice. Accordingly, Lin was not published before the claimed invention was made, and thus, claims 1-31 are not anticipated by Lin under section 102(a).

Even if it were assumed that Lin is prior art, Lin still does not anticipate the claimed invention. As discussed above, claim 1 recites checking, using the computer structure, at a time of identification of a new value of a quantity included among fuzzy inference membership functions and operands, whether the new value is already present in the computer store; and preventing, in response to the checking, redundant storage of the new value of the quantity in the computer structure. Lin does not check in a computer store for already-stored values that match a new value of a membership function or operand and does not prevent redundant storage of such a new value. In fact, the entire point of Lin is to create a dynamic link rule base that is a redundant sub-set of an original rule base. Lin simply compares an input value with a premise part of each of numerous fuzzy rules stored in the original rule base and copies those fuzzy rules having a non-zero firing strength, based on the comparison, into the dynamic link rule base. Nothing in Lin suggests a method of preventing redundancy in the original rule base by itself; in the dynamic link rule base by itself; or in the dynamic link rule base compared to the original rule base. Accordingly, Lin does not anticipate claims 1-11 regardless of the published date of Lin.

Although the language of claims 12-22 differs from that of claims 1-11, several distinguishing features of claims 12-22 will be apparent in view of the above discussion.

Lin also does not disclose the invention recited in claims 23-28. In particular, Lin does not disclose fuzzy inference encoding means that compares an encoded input membership function to a stored membership function, stores a pointer to a matching stored membership function, stores the encoded input membership function if a match is not found, or store a pointer to the stored encoded input membership function. Instead, Lin simply compares an input value to stored fuzzy rules without comparing fuzzy rules or membership functions to each other.

Without comparing membership functions, Lin cannot possibly store a pointer and/or store an encoded input membership function based on such a comparison. Accordingly, Lin does not anticipate claims 23-28 regardless of the published date of Lin.
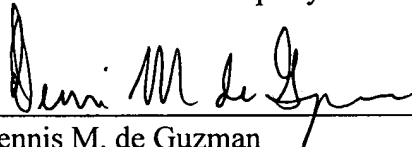
Although the language of claims 29-31 differs from that of claims 23-28, several distinguishing features of claims 29-31 will be apparent in view of the above discussion.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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Enclosure:
    Rule 131 Declaration
    Appendix A
    Translation of Appendix A
    Appendix B
    Appendix C
    Appendix D

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